A TREATISE OF *ALL THE* MUSCULES OF THE WHOLE BODIE.

BY

ALEXANDER READ, Doctor of Physicke, a Fellow of the Colledge of the Physicians of the famous City *London*, and a Brother of the Worthipfull Company of Barbour-Chirurgians of the same Citie.

The Author is to read of this subject this next Shrove-tide publikely, in the Theater erected this last yeere by the aforesaid Company, at their extraordinary great charges.

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TO THE RIGHT HONOURABLE JOHN Earle of *Bridgewater*, one of his Majesties most honorable privie Councell, and President of the Councell of the Marches of Wales: *Alexander Read* D.M. wisheth encrease of true honour, and all other felicitie.

SEeing, according to the laudable and anniversary custome used in the Barbour-Chirurgians Hall, I am publikely this yeere, about Shrove-tide, to read of some

part of the Anatomie; and that I was moved by the Worſhipfull of the Companie, to diſcourſe of the muſcules of the bodie of man; I thought it fit to ſet downe the doctrine of them as briefly and plainely as may bee: partly to enable thoſe who are Maſters of the Anatomie this yeere, and are to ſhew them to the Spectatours, as I ſhall ſet downe their beginnings, bellies, and inſertions: partly to make my auditors the more ready to apprehend what I ſhall deliver of them when I am come to read, if they will be pleaſed to peruſe this ſhort Treatiſe the meane while. Which if they do, they ſhall not thinke their labour loſt:

For

For they ſhall ſee that in a ſmall compaſſe preſented to the eye, which the moſt learned and skilfull writers and diſſectors have ſet downe, but in more ample volumes; and they ſhall undoubtedly take pleaſure in labouring to know the inſtruments of locall motion, ſo various in the bodie of man. Theſe my labours in a hard and intricate buſineſſe, I thought good to dedicate to your Honour, both becauſe you take delight in ſuch ſtudies, and becauſe I am willing to leave to poſteritie ſome ſignification of a thankfull minde, which I ever entertained toward your Honour, who have ever uſed mee reſpectively and courteouſly, ſithence it plea-

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pleaſed your Honour firſt to take notice of me, one of the loweſt ranke amongſt the learned. This fruit of my mind, although perhaps not ſo pleaſant as may bee found with others, you will I hope accept of, conſidering rather the mind of the giver than the gift it ſelfe. In *London*, *Decemb.* 18. 1636.

A Treatiſe of all the Muſcules of the bodie.

Cap. 1.

The deſcription of a Muſcule.

A Muſcule is a diſſimilarie part, framed of its proper membrane, a fibrous fleſh, a tendon, veines, arteries, and nerves, appointed by nature to be the inſtrument of free motion. *The parts* then are either common or proper. *The common* are three: The veine,

The deſcription of a muſcule.

The parts conſtitutive.

the arterie, and the nerve. *The proper* ſo many; the fibrous fleſh, the membrane, and the tendon. The *veines* affoord nouriſhment, the *arteries* life, and the *nerves* motion. Theſe ſpring either from the braine, or from the *ſpinalis medulla*. It is implanted either in the beginning, or about the middle of the muſcule. *The nerve* as ſoone as it hath entred into the ſubſtance of the muſcule, like unto a ſhrub, it is diſperſed into a number of twigges, which at the laſt end in it, & become inconſpicuous. *The fibrous* fleſh is

Veines.

Arteries.

Nerves.

The fleſh.

is extended onely according to the ſtraight poſition of the *fibræ*, whereas the fleſh of the other parts hath no certain poſition. *The fibres* of every muſcule are alwaies ſtraight: wherefore the muſcules of the belly have not their denomination from their fibres, for they are all ſtraight; but from poſition & ſituation: ſo that the muſcule called *maſſeter* is accounted double, ſeeing it hath two ſorts of fibres one lying upon another. Every muſcule hath a proper *membrane*: It is ſo

The fibres.

The fibres ſpring from the nerves, according to Galen.

The membrane.

so more properly named than a coat: for veines & arteries are properly said to have coats. The membrane doth either spring from the tendon, or is framed by nature in the very first conformation of the parts. The last proper part of the muscule is *the tendon*. It is a similarie bodie, framed of the seed of a sinewie-like substance, onely, (for it hath a peculiar substance differing from a sinew) white with a kind of brightnesse, thicke, hard, and smooth, extended according to the length

The tendon.

length of the muſcule. *It is ten times* bigger than a nerve: *It beginneth* at the head of the muſcule, paſſeth through the belly of it, and endeth in the taile, as manifeſtly appeareth in the foot of a cock. *All muſcules* which are appointed for the moving of bones, have tendons; but thoſe which move other parts, as the tongue, lips, bladder, and the *anus*, ſeldome have. *It is ſaid* to ſpring from the bone; this is to bee underſtood by reaſon of its inſertion, but not production. *It is the principall part*

Which muſcules have tendons.

How it ſpringeth from the bone.

It is the principall part of a muſcule.

part of the muſcule, and not the fibrous fleſh, firſt, becauſe it only hath ſtrength to lift up the bones: 2. becauſe it onely is fit to contract it ſelf, whereas the looſe and ſoft fleſh is neither able to lift up the bones, nor to contract it ſelfe: 3. becauſe there is not ſuch a part in all the reſt of the bodie. *It hath its motory* facultie from the nerve by influence, as the loadſtone draweth the iron, and the cramp-fiſh doth benumme the hand of the fiſherman by the pole. *It is framed* by nature

From whence it hath its motive facultie.

Its materiall cauſe.

ture of the ſeed in the firſt conformation, and not of the nerve and ligament mingled together: 1. Becauſe a nerve being ſomewhat ſoft, will not admit commixtion with the ligament being hard. 2. Becauſe the nerve is not carried to the tendon, but doth end into inconſpicuous threeds. 3. Ligaments are inſenſible, but tendons are of exquiſite ſenſe; as appeareth of the great paine which enſueth if they be pricked. 4. Becauſe the ligaments of the bones have the compoſition of mem-

membranes: for they are made of ſtraight and tranſvers fibres, as a web; whereas the tendons have only ſtraight fibres.

Its beginning.

The tendon beginneth at the belly of the muſcule, for there it is bigger and ſtronger than in the head or taile.

The figure of tendons.

The tendons are ſometimes round, as in the *muſculus biceps*; ſometimes membranous, as in the muſcules of the belly. Theſe are the parts conſtitutive of a muſcule.

The parts from the poſition.

It hath beſides theſe parts derived from the poſition; and thoſe are three: The head, the belly, and

the

arthe taile. The head is the
andbeginning, this is in the
ebpart unto the which the
onsmuſcule is contracted:
esthe belly is the thickeſt
apart: the taile is the en-
lesling of it; & it is inſerted
ndnto the part which is
admoved. It is called ἀπόσυ-
reσις, and commonly *Ten-*
in*do*. The ſubſtance of the
;endon in all theſe parts
s,s uniforme. *The uſe of a*
ne*muſcule* was ſet downe in
tsthe laſt part of the de-
e.cription, in that it was
tssaid to be the inſtrument
i-of free motion, and not
:voluntary, becauſe beaſts
dhave muſcules, unto
whom

The uſe of a muſcule.

whom will is denied, because it presupposeth reason. *A muscule in man* performeth that which beaver doth, when as such a heavie weight is to be lifted up, which cannot be done with the hands only: Seeing in everie organicall part there are foure kinds of parts (according to Galen, 1. *Vsus part. c.* 8.) *The tendon* the principal part; which is sometimes altogether united, sometimes divided. *The nerve* is the part without the which the motion cannot be performed. *The flesh* be-

The divers parts of a muscule.

teret

reth the action. *The reſt* f the parts helpe and arther it.

Cap. 2.

Of the differences & action of Muſcules.

From whence the differences of muſcules are taken.

THE *differences of muſcules* are taken from ſundrie things: firſt, 1. *From their ſubſtance*, ſo ſome are fleſhie, as ſundry of the tongue and *larinx*: ſome are membranous, as the conſtrictores of the noſe: and ſome are partly fleſhie and partly nervous, as the temporall. 2. *From the quantitie*: *The greateſt*

The greateſt and ſmalleſt muſcule.

greateſt of all is the f
of thoſe which ext
the breaſt, for it doth
cend from the end o
ſacrum to the firſt ve
bra of the thorax.
leaſt of all is the intern
muſcule of the eare:
reſt are of a meane b
neſſe, and come neere
ther to the biggeſt or
leaſt. From the quantit
the muſcules are called
ther long, broad, or thic
3. *From the ſituation*
from hence ſome are ca
led externall, ſome inter
nall, ſome oblique, ſo
ſtraight, ſome tranſverſe
4. *From the figure*: as
del-

ltoides. 5. *From their*
ginning: ſo ſome pro-
ed from bones, ſome
om cartilages, as thoſe
f the larinx, ſome from
ndons, as the lumbri-
iles. 6. From the *vari-*
ie of parts, ſo ſome are
alled *bicipites*, having
wo heads. 7. From their
mpoſition, ſo ſome are
ngle, ſome double; be-
auſe ſome have more
eads, ſome more tailes.
he unitie of the mem-
rane and belly, which
vrappeth the muſcule,
auſeth the unitie of it,
nd the pluralitie of the
embranes and bellies,
as the

The cauſes of the unitie and pluralitie of muſcules.

the pluralitie of the mu
cules. 8. *From their acti*
on: Foure differences *sup*
muſcules are taken fr
hence: for firſt, ſome *con*
hence called *fraterni* no
congeneres, brother tr
ſome *antagoniſtæ*, adv
ſaries. 2. Some oth
move themſelves, as c
ſphinters; ſome o p
parts, as the reſt. 3. So cu
have one onely action a
the greateſt part of n
muſcules; ſome have t
vers actions, as the *ma*
ter and *trapeſius*. T
fourth difference is tak
from the varietie of
action; ſo ſome are cal

flexor

he m*lexores*, ſome *extenſo-*
eir *ares*, ſome *rotatores*, ſome
nces *ſupinatores*.

en fr *As for the proper acti-*
ome*on* of the muſcule, it is
erni nothing elſe but the con-
ther traction of it toward its
, ad beginning. Now two
on things enſue after this
, as contraction: *for firſt*, the
or part into which the muſ-
. So cule is inſerted, muſt bee
tion apt to move: *ſecondly*, it
of muſt be drawne towards
ave the beginning of the muſ-
ma cule. *The diverſitie of the*
T *action* proceedeth from
tal the diverſitie of the ſitu-
of ation of the muſcules: ſo
cal a ſtraight muſcule hath a
xor ſtraight

The proper action of a muſcule.

The cauſe of the diverſity of the action.

ſtraight motion; a tranſverſe a tranſverſe motion; an oblique, an oblique motion; and that which compaſſeth a part hath an orbicular motion, as the ſphinters. Now of the *motion* of the muſcules there are foure differences. 1. the contraction: 2. the perſeverance of the contraction: 3. the relaxation of the contraction: and 4. the perſeverance of the relaxation. This perſeverance is called *motus tonicus*, when as the member is ſtill kept in the ſame poſture; which is performed

The differences of the motion of muſcules.

Motus tonicus.

med by that faculty which governeth the bodie. The efficient cauſe then of the action is the ſoule, moved by its appetite. It uſeth three inſtruments: the braine, the nerve, the muſcule: *the braine* receiveth the charge; *the nerve* carrieth it to the muſcule; *and the muſcule* doth performe the action. *So that* a muſcule from the action may thus bee deſcribed: A muſcule is an organicall part of the bodie, appointed for the free contraction of it ſelfe towards its beginning, for the moving

The efficient cauſe of the motion.

A deſcription of a muſcule from its action.

ving of the part into th
which it is inſerted.

Cap. 3.
Of the muſcules of the Eye-lids.

Each eye-lid hath 4
muſcules: the firſt
frontalis, to lift it up: th
ſecond is *orbicularis ma
jor*, or the larger roun
muſcule under the fro
tall: *the other two* are ca
led *Ciliares*, or of t
eye-lids. In each of the
there is one to ſhut t
eye-lids. The motion
the upper is manifeſt, b

of the lower obſcure. In breadth they exceed not the breadth of the cartilage. To ſhew the *frontall* you muſt divide the skin of the forehead where the haire beginneth, until you come to the eie-brow. *Orbicularis major* lieth under the frontall, and appeareth when the skin of the eye-brow is removed. The *Ciliares* compaſſe the eye-lids orbicularly.

The occipitall, or nowle muſcules, meet with the frontals, or thoſe of the forehead, in the upper part. *The occipitals* begin

on each ſide of the nowle
and marching upward
by a broad and membra
nous tendon to the eare
meet with the frontals.
theſe be very fleſhy, the
are able to draw back th
whole skin of the head.

Cap. 4.

Of the muſcules of the ey

The ſtraight muſcules.

THeſe are in numb
ſixe; foure ſtraigh
and two oblique. Th
firſt *of the ſtraight* is ca
led *attollens*, or *ſuperbu*
that which pulleth up th
eye. The ſecond is *d*

prime

primens or *humilis*, that which draweth downe the eye. The third is *adducens* or *bibitorius*, that which pulleth the eye to the nose. The fourth is called *abducens* or *indignatorius*, that which pulleth it from the nose.

All these spring from the cavitie of the bone, making the orbit of the eye about the hole of the opticke nerve; and being compassed with much fat, passing under the *conjunctiva*, end by a broad, but thin *aponeurosis*, in the *cornea* or hornie membrane, where it beginneth

Their beginning, & insertion of them.

ginneth to bee cleere.

The oblike muſcules.

The oblique muſcules are called *circumagentes*, winders about, and *amatorii*, or love makers; and are in number two: the firſt is *obliquus major, ſeu ſuperior*, the uppermoſt and largeſt. This beginneth within the orbit of the eie, by the hole of the opticke nerve, and paſſing to the upper part of the great corner of the eie, endeth in a ſmall tendon, which paſſeth through a tranſvers cartilage there placed, as a cord through a pully, and is inſerted into the upper

ſide

ſide of the *cornea*. The ſecond is *obliquus minor*, or *inferior*, the lowermoſt and ſmalleſt. This ſpringeth from the lower and almoſt outer part of the orbit, about the chinke, which doth unite the bones of the upper jaw bone, neere to the glandule, & paſſeth obliquely to the outer corner of the eye, and in the upper meeteth with the tendon of the other oblique muſcule. This bringeth the apple of the eye to the noſe, as the other draweth it from it.

How theſe muſcules are to be ſhewed.

Before you ſhew the muſ-

cules of the eye, cut off the fat with the ciſſars: then ſhew firſt the *obliquus major*, then the *obliquus minor*, and laſt of all the foure ſtraight muſcules. Nevertheleſſe let the *obliquus major* remain laſt when all the reſt are taken away, that you may ſhew the tendon of it paſſing through the pulley the more plainly.

Cap. 5.
Of the muſcules of the noſe.

THe *noſe* hath ſixe muſcules, whereof there

there be *erectores*, or raiſers upwards, two; one on each ſide of the noſe. *They begin* where the hole is under the glandule, and ſo cleaving to the bone, are outwardly inſerted and carried to the *Pinnæ*, or ſides of the noſe.

The raiſing up muſcules.

There are two alſo called *dilatatores*, or openers, on each ſide one, which dilate the noſethrils, not raiſing up the noſe. They are like to a leafe of the myrtle tree. They have their beginning from the bone of the upper jaw, neere to

The ſtretching muſcules.

the ſides of the noſe, and being placed about the cartilage, end in the top of the noſe called *pirula*, the tip.

The pullers together.

There be alſo two *conſtrictores*, pullers together of the noſethrils. Theſe are ſmall & membranous, hid under the membrane which covereth the inſide of the noſe. They have their beginning where the bone of the noſe endeth, and are implanted in the inner ſide.

Cap. 6.
Of the muſcules of the lips

The muſcules of the lips are either common to the cheekes and lips, or proper onely to the lips. *The common* are two: the firſt is *zygomaticus*, or *detrahens quadratus*: this is a thin muſcule reſembling a membrane, enterlaced with fleſhy fibres. This hath its beginning from the *vertebræ* of the necke in the outer ſide, the ſhoulder blade, the cannell bone, and the breaſt bone

The common muſcules.

1.

bone, & mounting up by oblique fibres to the face, is implanted in the chin, where the 2. lips are joyned: this muſcule doth draw the cheeks downeward.

2. The ſecond is called *buccinator*, or *bucco*: this lieth under the former, in the upper part of it. It doth make up all that part of the cheek which is blown up when a trumpet is ſounded. This ſpringing from the brims of the upper jawbone circularly, doth end in the brims of the lower jawbone. It is wholly membranous, and interlaced with

with divers fibres,& is ſo covered with the membrane which covereth inwardly the mouth,that it hardly can bee ſevered from it. When this muſcule is contracted, it is turned inwards, and ſo it turneth in the meat which hath eſcaped the teeth;& ſo when the meat is chewed it is kept inwardly by the tongue, & outwardly by this muſcule, that it eſcape not from the teeth.

The proper muſcules.

Now the *muſcules proper* to the lips are 4. paire: Firſt, *par attollens*, which beareth up the upper lip.

lip. This ſpringeth from the firſt bone of the upper jaw, where the apple of the cheeke is; there it is broad and fleſhy: from thence marching obliquely to the forepart, it is inſerted into both the ſides of the lips neere to the noſe.

2. The ſecond is *deprimens*, which pulleth downe the lower lip. It ſpringeth from the ſides of the chin, where two ſmall bunchings are: there it is fleſhie; from thence marching obliquely, it is inſerted into the middle of the lip: it is every where broad.

The

The third paire is *abducens*, or drawing the lips to the sides. It ariseth fleshie and round from the hollownesse which is under the *maxilla*, and being lapped with much fat, it is inserted into those places where both the lips are joyned together. 3.

The fourth is *corrugans*, or *constringens*, that payre which purseth the lips together. It is called also *osculatorium*, or the kissing paire, which draweth the lips together when we kisse. This paire is framed of a fungous fleshy substance, 4.

ſtance, having orbicular fibres, as the *ſphincter* hath. The ends of both the lippes are made up of theſe, which appeare red if wee bee in health, but pale if we be ſickly.

Cap. 7.
Of the muſcules of the lower jaw.

THe lower jaw is moved upwards, downwards, towards the right ſide, toward the left ſide, and towards the backe part. To procure theſe motions five paires of muſcules

muſcules are appointed:
The firſt is called the *temporale.* This doth ſpring from all the hollowneſſe of the bones of the Tempils, by a broad, fleſhie, and ſemicircular beginning, and by degrees becomming narrower, and being carried under the yoke bone, it is inſerted into the proceſſe of the lower jaw bone by a ſtrong tendon. This tendon is diſperſed through the whole muſcule. The *fibræ* paſſe frō the center to the circumference. *This muſcule* is covered in its upper part with

1.

with the *pericranium* but in the lower part it bare, and reſted upon the bare *cranium*. *Wherefo* if this muſcule be wou ded, fearfull ſymptom enſue, partly becauſe th tendon paſſeth throug the whole muſcule: par ly becauſe it is covere with the *pericranium* This muſcule forcibl pulleth up the lowe jaw, and ſo ſhutteth th mouth, & ſpringeth fro *os frontis*, *os ſyncipiti temporum*, & the *ſphæn ides*. The ſecond *paire called deprimens digaſtri cum*, or *biventre*, becauſ

Why the wounds of the temporall muſcule is dangerous.

2.

anium hath two bellies, be-
part it weene which a tendon
pon tieth: this doth pull
erefo lowne the jaw, and ſo
wou penneth the mouth. It
ptom hath its beginning from
iſe t he proceſſes of the veins
roug f the Tempill, called
: par *Styloidei*, where it is ner-
over vous & broad; and after-
nium ward becomming fleſhie,
r cib ſmall, and round, it paſ-
low ſeth downeward, and is
th t ſerted into the inner fore-
fro part of the jaw bone,
ipiti which is under the chin,
hæm and ſomewhat rough.
aire The third is called *maſſe-*
aſtr *rer*, becauſe it ſerveth for
cau chewing by moving the
jaw,

jaw to the right and
the left ſide: from its ſitu
ation it may be called *l*
terale. This hath two b
Its begin- ginnings: one is nervou
ning. 1. ſpringing from the ſ
ture, where the firſt bon
of the jaw is joyned t
the fourth. This begi
ning is large and ſtrong
2. the other beginning is fle
ſhy, proceeding from th
os jugale, & ſo marchet
towards the chin, and i
implanted into the whol
largeneſſe of the lowe
jaw ſtrongly. The fibre
of this muſcule, by reaſon
of the two beginnings
croſſe one another; ſo
that

that theſe muſcules doe not onely move the jaw laterally, but backeward and forwards alſo.

The fourth paire is called *pterigoideum externum*, *aliforme externum*, or *pterigoideum abducens*. This being in its beginning ſtrong, and partly nervous and partly fleſhie, doth ſpring partly from the upper externall ſides of the wing-like proceſſes, partly from the rough and ſharp line of *os cuneiforme*: then marching by ſtraight fibres, it becommeth greater. It is inſerted 4.

inſerted by a ſtrong te
don into the internall
terall part of the jaw
which is under the te
don of the tempora
muſcule. This move
the jaw forward, whi
appeareth when the lo
er teeth are placed
5. bove the upper. The fif
paire is tearmed max
lam adducens, or *pterig*
deum internum. Th
draweth the jaw towar
the head, or backwar
This, in the beginnin
being thick and nervou
doth ſpring from the i
ner cavitie of the wing
like proceſſes; then be
commer

comming fleſhie, large, and thicke, marching by a ſtraight paſſage, it is inſerted into the lower jaw by a nervous, broad, and ſtrong tendon, in the inner and hinder part of the jaw, about the cavitie where the nerve entreth, where ſome aſperities are found.

Cap. 8.

Of the muſcules of the eare.

THe eare is moved, though obſcurely, foure manner of wayes: *viz.*

The outer muſcules, foure paire.

viz. upwards, downwards, forward, and backward. The muſcules which move the eare either outward or inward. *In the outſide* there are foure paire. The firſt paire is called *attollens*: this is nothing but a portion of the frontall muſcule, which is carried above the temporall muſcule, and is inſerted into the upper part of the eare: It is thin and membranous in the beginning about the ending of the frontall muſcule, and becomming narrower, goeth downe to be inſer-

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ted into the upper part of the eare. The ſecond is *deprimens*, or puller downe: This ſpringing from the *muſculus cutaneus* above the *parotides*, broad, fleſhie, and ſometimes fibrous; and afterward becomming narrower, is inſerted by its tendon into the root of the cartilage of the eare. The third is *adducens ad interiora*, whereby the eare is drawen forward: This is but a particle of the *muſculus quadratus*, which pulleth downe the cheekes. This aſcending with its fibres, is implan

ted into the root of th eare. The fourth is *abdu cens ad poſteriora*: th hath its beginning in th backe part of the hea from tunicles of the mu cules of the nowle, abov the *proceſſus mammillā ris*: being there but na row, it is carried downe wards tranſverſly, and i inſerted into the eare be hind. In the *inner part* o the eare there are two found out by *Aqua pe dente*, and *Julius Coſſer us*. The firſt is called *ex ternus*: it is ſmall, ſprin ging from the skin an membrane which cov th

The inward muſcules two.

the paſſage of the eare; then becomming fleſhie, it marcheth by a ſhort tendon to the outer part of the *tympanum*, and is inſerted about the center of it, where within the *malleus* or hammer is tyed to it. The ſecond is called *internus*: this is ſmall, and placed within the *os petroſum*. It hath its beginning in the *baſis* of the wedge bone; then becomming ſomewhat fleſhie, and after the midſt of it narrower, it is divided into two ſmall tendons: whereof the one is inſerted into the upper

proceſſe of the *malleus*, & the other into the neck of it.

Cap. 9.
Of the muſcules of the tongue.

THe tongue hath four paires of muſcules, by the which it is moved according to all the differences of moving by a wonderfull volubilitie. The firſt is *geneoglo ſſum*: this pulleth the tongue without the teeth & lips. It ſpringeth from the ruggedneſſe which is ſeen in

in the middle of the lower jaw, in the lower part of it, and is inserted into the root of the tongue. The second is *Myloglossum*; this helpeth the former. This springeth from the inner part of the lower jaw, where the farthest grinding teeth are, and about the root of the tongue it is inserted into the ligament, by the which the tongue is tyed to the throat. The third is called *Hypsiloglossum*, or *retrahens*. This rising from the middle and upper part of the bone of the tongue fleshie, marching

ching alongſt the tongue it is inſerted into the middle of it. This draweth the tongue inward when it is contracted. The fourth is called *ceratogloſſum*, or *Styloglo ſſum*: by this it is drawne towards the ſides. It ariſeth from the *ſtyloides proceſſus* of the bone of the tongue, by a fleſhie, ſmall, and ſharpe point; then becomming broader, it is inſerted into the ſides of the tongue.

CAP. 10.

Cap. 10.
Of the muſcules of the bone of the tongue.

THis bone is moved upwards, downewards, forward, backeward, and toward the ſides, as the tongue is; becauſe it is the foundation of the tongue: and the muſcules of it ſerve for the motions of the tongue and of the *larynx* alſo, when as the *larynx* and tongue are lifted up, and let downe when we ſwallow. To performe the former actions it hath

foure paire of muſcules. The firſt is called *Sternohyoidæum*: this ſpringing from the upper, but inner part of the *ſternum*, and marching by the winde-pipe, is inſerted into the root of the *hyoides*. The ſecond is oppoſite to this, and is called *genihyoidæum*: this ſpringing from the inner part of the chin, fleſhie, broad, and ſhort, is inſerted into the root of the bone, where a cavitie is to receive it. The third is *Coracohyoidæum*: It riſeth at the firſt ſmall and long, but fleſhie, about

bout the necke, and the crowes-bill-like proceſſe of the *ſcapula*, and paſſing under the *levator* of the ſhoulder-blade, called *muſculus patientiæ*, it is inſerted into the points of the *hyoides*: it hath two bellies, and is very long. The fourth is *ſtyloceratohyoidæum*: This riſeth from the root of the *proceſſus ſtyloides*, and endeth in the points of the *hyoides*.

Cap. II.
Of the muſcules of the larynx.

The common muſcules.

THe muſcules of the *larynx* are either common or proper. *The common* are foure: two called *bronchii*, and as many called *hyothyroidæi*. The *Hyothyroides* doth lift up the *larynx*. This ſpringeth from the whole *baſis* almoſt of the bone of the tongue, and is implanted into the externall middle part of the *thyroides*, or buckler-like cartilage. *Bronchius* pul-

leth

leth downe the *larynx*. This ſpringing from the inner part of the *ſternum*, mounteth up to the *baſis* of the *thyroides*, by the pipes of the *trachea arteria*. This muſcule with its fellow raiſeth up the length of the wind pipe in beaſts and fowles, which have a long neck. *The proper muſcules* are in number five. The firſt is *Cricothyroides anticus*: this dilateth it. This ſpringeth from the fore and externall part of the ring-like cartilage, and is inſerted into the laterall parts of the *Thyroides*.

The proper muſcules.

The

The third is *Cricothyroides lateralis*. It purſeth together the *thyroides*. It ſpringeth from the laterall part of the *cricoides*, and is inſerted into the externall laterall parts of the *thyroides*. The third is *Cricoarytenoides poſticus*: this openeth the ewar-like cartilage. This paſſeth from the backe part of the *cricoides* to the *arytenoides*. The 4th is *Thyroarytenoides*, or *glottidæus*: this helpeth the former, and ſpringing from the inner and fore-part of the *thyroides*, is inſerted into the laterall

parts

parts of *arytenoides*. The fifth is *Arytenoides*: this is a round muſcule, compaſſing the ewar-like cartilage.

Cap. 12.
Of the muſcules of the uvula *and throat.*

THe *uvula* hath two muſcules to hold it up: for it is pulled down by the weight of the meat as it paſſeth by it. The firſt is *Pteryſtaphilinus externus*: this ſpringeth from the upper jaw, a little below the furthermoſt grinder, & is inſerted into the ſide of the *uvula*.

The

The ſecond is *Periſtaphilinus internus*: this proceedeth from the lower part of the internall wing of the *pterygoides* proceſſe, and is inſerted into the *uvula* in like manner.

The throat, or the beginning of the *œſophagus* called *pharynx* hath ſeven muſcules, to wit, three paires, and one without a paire. Of the paires, the firſt is *ſphenopharingæus*: this ſpringeth from the ſharpe point of the *ſphenoides*, neere to the *ſtyloides* proceſſe; and paſſing downeward, is inſerted into

into the laterall parts of the throat, to pull up the mouth of the ſtomacke. The ſecond is *Cephalopharingæus*. It ſpringeth from that part where the head is joined to the neck, and marching down it is ſpred about the *pharynx*, & ſeemeth to make the membrane of it. The third is *ſtylopharingæus*: This ſpringing from the *ſtyloides* proceſſe, is laterally inſerted into the *pharynx* to dilate it. That which hath no match is called *œſophagæus*: this ſpringing from one ſide of the *thyroides*, and circularly

cularly compaſſing the hinder part of the *pharynx*, it is tyed to both the ſides of the *thyroides* to contract the mouth of the ſtomack, as the *ſphincter* doth the *anus*.

Cap. 13.

Of the muſcules of the head

The muſcules of the head are either common or proper. *The common* are thoſe which together with the neck move the head: theſe are the muſcules which move the neck. *The proper* are thoſe which onely move the head.

The common.

The proper.

head, when the necke remaineth immoveable: these are in number 14. or 7. paire. First, two *mastoidæi* bend the head forward. These beginning in the upper part of the *sternum*, and the middle of the cannel bone, are inserted into the processe called *mastoides*, obliquely. These are placed in the forepart: behind 12. or 6. paire are placed. The first is *splenius*, or *triangularis*: this proceeding from the sixt *vertebra* of the breast, & marching to the 3d *vertebra* of the neck, is inserted into the *occiput*.

The

The ſecond, *Complexus* or *trigeminus*. Thi ſpringing from the tran verſe proceſſes of t ſame *vertebræ*, is inſe ted into the *occiput*. T third, *recti majores*, two theſe ſpringing from t edge of the ſecond ſpo diſt, are inſerted into th *occiput*. The fourth, *re minores*, two: theſe l under the former, pr ceeding from the bac part of the firſt ſpondi end into the *occiput*. Th fifth, *obliqui majores* theſe ſpringing from t *ſpina* of the ſecon *vertebra*, reach to th tranſve

anſvers proceſſe of the
rſt *vertebra*. The ſixth,
liqui minores, under
ele proceeding from
e ſame beginning, are
rried to the *occiput*.
he oblique muſcules
rne about the head: the
her muſcules extend it.

Cap. 14.
Of the muſcules of the necke.

THe necke hath eight muſcules, foure on ch ſide: for it is exten- d by two paire; *ſemi- natum*, and *tranſverſa- um*. *Semiſpinatum*: this pro-

proceeding from the
næ of the upper ſe
vertebræ of the bre
and five of the *ver*
bræ of the neck, it is
ſerted into the edge
the ſecond *vertebra*
the necke. *Tranſverſa*
um: This riſing from
tranſverſe proceſſes
the ſixe upper *verte*
of the backe, is inſer
outwardly into all
proceſſes of the *verte*
of the necke. It is bend
by foure muſcules,
on each ſide: to wit, f
longus: this being pla
under the *œſophagus*, d
ſpring from the th

ertebra of the back, and mounting up, it is tyed to ll the *vertebræ*, and end- th in the fore proceſſe f the firſt *vertebra*. The hird is *par ſpinatum, tri- ngulare, ſcalenum*. It roceeding from the rſt rib, is inſerted into ll the tranſverſe fibres f the necke, by oblique bres internally. It is erforate to make way or the veines, arteries, nd nerves which paſſe o the arme.

CAP. 15.

Cap. 15.
Of the muſcules of the breaſt.

The dilaters.

FIrſt of all, theſe dil
it. 1. *Subclavius:* t
ariſeth fleſhie from
inner part of the *clavi*
la, and is inſerted i
the firſt rib, neere to
1. *ſternum.* The ſecond
2. *ſerratus major:* this d
ariſe from the inſide
the ſhoulder blade, a
the two upper ribbes,
is inſerted into the lo
five true ribbes, and t
upper ſhort ribbes. T
3. third is *ſerratus poſti*
ſuperi

superior : this lying under the *rhomboides*, springeth from the edges of the three lower *vertebræ* of the neck, and from the edge of the first *vertebra* of the backe nervous, and is inserted into the three upper ribbes. The fourth is, *serratus posticus inferior* : this ariseth from the edges of the three lower *vertebræ* of the back, and of the first *vertebra* of the loines, and is inserted into 3. or 4. lower short ribbes. 5. *The eleven externall intercostall*, which performe the office but of one muscule.

These

Theſe ſpring from th
lower part of the uppe
rib, and are inſerted int
the upper part of th
lower rib obliquely, an
forward.

The contracters.

Theſe that follow co
tract the breaſt. Firſt, th
1. *triangularis*: this ari
ſing from the inward an
lower part of the *ſte*
num, is inſerted into th
cartilages of the two up
per ribbes. This as a pi
low receiveth the uppe
2. part of the heart. The ſe
cond is *ſacrolumbus*
this ariſing from the
ſacrum, and the ſharp
proceſſes of the *vertebr*

of the loines, endeth in the upper ribbes about their beginnings, beſtowing upon each rib a tendinous latch. Thirdly, 3.
the eleven internall intercoſtals, which are as one muſcule. Theſe paſſe obliquely from the lower to the upper rib, filling the diſtance: their fibres are oppoſite to thoſe of the externall, repreſenting a Saint *Andrewes* croſſe. Theſe ſerve for violent breathing, being ſeconded by the oblique muſcules of the belly.

Diaphragma, or *ſeptum tranſverſum*, is the inſtru-

ment of free motion. Th
head of it is in the cente
but the taile in the ci
cumference of the lowe
ſhort ribbes. For fro
the fourth ſhort ribbe
the laſt, cleaving to t
brims of them, it paſſe
by double or triple fo
ſhie and tendinous pro
ductions to the twelf
vertebra of the back
and from thence to t
third *vertebra* of t
loines.

CAP. I

Cap. 16.
Of the muſcules of the loines.

THe backe doth not move for want of muſcules, and by reaſon of the ribbes betweene the neck and loines, whileſt the outward parts are moved. Onely the laſt ſpondill of the backe is moveable; for it doth not receive, but is received both above and under: but ſeeing it is annexed to the loines, the motion is rather to be aſcribed to the loines than to the

Benders two.

backe. *The loines* are bended by two muſcules called *flexores*; there is one on each ſide. They ſpring from the hinder part of the edge or brim of the ſtarcke bone, and inner laterall part of the *os ſacrum*, and march by the tranſverſe proceſſes of the *vertebræ* of the loins fleſhie to the laſt rib.

Extenders foure.

They are extended by foure muſcules, whereof there are two in each ſide. Theſe are ſo wrapped together, according to the length of the *ſpina* that they may ſeeme either to be as many paires

of muſcules as are ſpondils, or one onely paire giving tendons to the *vertebræ.* The firſt is *ſemiſpinatus*: this ſpringeth by a nervous beginning from all the *ſpinæ* of the *vertebræ* of the loines and *os ſacrum*, and ends in the tranſverſe proceſſes of the *vertebræ* of the loines, & all thoſe of the breaſt. The ſecond is *ſacer*: this ariſeth by a ſharpe and fleſhy beginning from the hinder part of *os ſacrum*, and is inſerted into the roots of the *ſpinæ* of the ſpondils of the back. If theſe foure

muſcules conſpire toge-
ther, they keepe the *ſpina*
immoveable: but if thoſe
of the one ſide doe onely
move, it is drawne to one
ſide.

Cap. 17.
Of the muſcules of the abdomen.

IT hath ten muſcules; five on each ſide. The firſt is *obliquus deſcendens*: this being parted into ſeven or eight fleſhie portions, whereof the three greateſt are finger-like inſerted into *ſerratus ma-*

major, it ſpringeth from the lower ſide of the ſixth, ſeventh, eighth, and ninth lower true ribbes: then going downe obliquely, it cleaveth to the bended part of the outſide of the *os ilium*, and to the edge of *os pubis*: then it endeth by a broad tendon in the *linea alba*. Wherefore it hath its beginning both above and below, but ending in *linea alba*. The ſecond is *obliquus aſcendens*: this ariſeth from the ſharpe point of *os pubis*, & from the top of the whole bending of *os Iſtium*, and

cleaving to the four lowermoſt ſhort ribbes by a double tendon clipping the ſtraight muſcule, it endeth in the *linea alba*. The fibres of this being oppoſite to thoſe of the former, repreſent a Saint *Andrewes* croſſe. The third is *rectus*: this ariſeth from the lower part of the *ſternum*, about the *cartilago xyphoides*, fleſhie; or rather from the cartilaginous ending of the ribs: and marching alongſt the belly, it is inſerted into the brim of the *os pubis*, by a thicke and nervous ten-

tendon. It hath three interſections, which ſome accompt ſeverall muſcules; two are above the navell, and one even with the navell. If the fourth be found, it is placed under the navell. Theſe interſections firſt ſtrengthen the muſcule, as knots doe reeds. Secondly, they further the extenſion of it in violent motions: ſo Tailers, to cauſe a cloth ſtockin to ſtretch and ſit cloſe, cut the cloth bias. The fourth is the *pyramidall*: this is placed above the lower part of the *muſculus re-*

ſtus. It ſpringeth from the *os pubis*. Moſt commonly there is found one in each ſide. Sometimes they are ſo united that they ſeem one broad muſcule; ſometimes they are altogether wanting, and then the ending of this is fleſhie, whereas otherwiſe it is tendinous. Theſe ſtrengthen the ends of the *musculi recti*. The fifth is the *tranſverſus*: this ariſing from the tranſverſe proceſſes of the *vertebræ* of the loines, below it is tied to the arch of the hanch bone, but above to the inner part of the

ſhor

ſhort ribbes ; and paſſing from thence to the *cartilago xyphoides* under the ſtraight muſcule, it endeth by a broad tendon in *linea alba*. This *linea alba* beginning at the *cartilago enſiformis*, paſſeth directly by the navell to the joining of the *os pubis*. It is framed of the membranous tendons of all the muſcules of the belly, the ſtraight excepted. But ſeeing the tendons of the muſcules of the right ſide are ſo firmly united to the left, that no ſigne of ſeparation can bee diſcerned, it is not

ſeen

ſeene but betweene the two ſtraight muſcules. The muſcules have their denomination from their ſituation, and the texture of their tendons. While the bodie is at reſt, they ſtrengthen the parts ſubjacent, and encreaſe their heat: in action, firſt, they further the excretion of the excrements: ſecondly, they help the delivery of the infant in labour: thirdly, they further ſtrong breathing: fourthly, they bend the *ſpina* in violent exerciſes.

CAP.

Cap. 18.
Of the muſcules of the genitals.

Penis, or the pricke of man, hath 4. muſcules, two on each ſide. The firſt is *erector* or *director*: this ariſeth from the inner knob of the hanch bone, and being tied by the ſide to the ligament of the pricke, it reacheth to the middle of it. The ſecond is *accelerator*: this ariſeth from the internall knob of *iſchium*, below the laterall ligament of the pricke, and from the *ſphincter* of the *anus*, and

and being placed with hi
fellow under the *urethr*
paſſeth to the middle o
the yard.

The *clitoris*, or little
pricke in women, hath
foure muſcules. The two
uppermoſt being round
they ariſe from the inter-
nall knob of the *iſchium*,
and being placed by the
laterall ligaments, cauſe
the erection of it. The
two lower are broad and
ſmooth, and proceeding
from the *ſphincter* of the
anus, are inſerted into the
brims of the *cunnus*.

The *ſtones* have two
muſcules to pull them
up:

up: they are called *cremastores* from κρεμάζω, to hold up. In health they keep the ſtones wrinkled, whereas in ſickneſſe they are flaggie and hang down. They are thought to ſpring from the fore and inner brim of the *os ilium*: but they ſeeme rather to be the endings of the oblique aſcending muſcules neere to the *os pubis*; which compaſſing without the productions of the *peritonæum*, paſſe with the ſpermatick veſſels towards the ſtone. The Cremaſters in women are ſhorter than in men,

men, & are placed above the production of the *peritonæum*: through this production the round ligament of the *matrix* paſſeth, which in women is compaſſed with a fleſhie ſubſtance, which reſembleth the cremaſter in men.

CAP. 19.

Of the muſcules of the bladder & anus.

THe bladder hath but one muſcule, called *ſphincter*, it doth compaſſe round the necke of the bladder. Above it com-

compaſſeth the *proſtates*, and is ſeated under them alſo. The fibres are orbicular. If one ſide be taken with the palſie, an involuntarie excretion of the urine doth not alwaies follow, becauſe a nerve is implanted into each ſide of the necke of the bladder. In women it reacheth to the hole by the which the urine paſſeth, and it ſeemeth to forme it.

The *anus* hath three muſcules. The firſt is *ſphincter*: this is fleſhie, & without the ſtraight gut two inches broad. The fibres are orbicular. It

It doth not ſpring fro
any adjacent bone, but i
onely inſerted into th
coccyx. The ſecond an
third are called *levatores*
they are placed with
the gut, and are large an
fleſhie. They are tyed
the ſides of the gut, an
reach to the *ſphincter*
they poſſeſſe the diſtanc
between the *iſchium* an
the *os ſacrum*.

CA

Cap. 20.
Of the muscules of the shoulder-blade.

THe shoulder-blade is moved forward, backward, upward and downward. It hath foure proper muscules. The first is called *trapezius*, or *cucullaris*: this hath its beginning from the lower part of the nowle bone towards the eare, fleshie: but from the *posterior* processes of the *vertebræ* of the neck, and the eight upper *vertebræ* of the breast, it springeth membranous 1.

branous and broad, and
inſerted into the *baſis*
2. the *ſcapula*. The ſecond
levator, or *patientiæ mu-*
culus: this hath its begi-
ning from the tranſver-
proceſſes of the firſt, ſe-
cond, third, and four
vertebræ of the necke
which beginnings bei
united, are inſerted in
the upper corner of th
3. ſhoulder-blade. The thir
is *ſerratus minor anticu*
this ſpringeth from th
four upper ribbes befo
they become cartilag
nous: cleaving to theſe b
foure fleſhie portions re
preſenting the teeth of
ſaw

saw, and are inserted by a broad tendon neere to the anchor-like processe of the *scapula*. The fourth is *rhomboides*: this is placed immediately under the *cucullaris*. This springeth fleshy from the hinder processes or *spinæ* of three of the *vertebræ* of the necke, and so many of the breast; and is inserted by as broad a fleshie ending, as the beginning was into the *base* of the shoulder-blade. 4.

The fifth is *serratus major*: this hath its beginning from the eight upper ribbes before they be- 5.

become griſtly. The b
ginnings are fleſhie po
tions like to the teeth o
ſaw, by the which it
inſerted into the like po
tions of the oblique d
ſcending muſcule. Th
it marcheth fleſhie
the ribbes upwards
the ſides of the breaſt,
is implanted by a lar
fleſhie end into the wh
inner *baſis* of the *ſcap*
It moveth the ſhould
blade forward and do
ward. The beginning m
bee in the breaſt wh
the fleſhie portions a
becauſe there the ner
are inſerted: and that p

is steadie, which the *scapula* is not.

Cap. 21.
Of the muscules of the arme.

THe arme hath five motions: for it moweth backward, forward, upward, downward, and circularly. It is moved upward by two erectors, *deltoides* and *supraspinatus*. First, *deltoides* springeth from the middle of the cannell bone, the top of the shoulder, and the whole *spina* of the *scapula*, 1.

la, and is inſerted into the middle of the ſhoulder
2. bone. The ſecond is *ſupraſpinatus*, or *ſuperſcapularis ſuperior*: this placed in the cavitie above the *ſpina* of the ſhoulder-blade, and paſſing under the upper part of the *ſcapula*, is inſerted into the necke of the ſhoulder-bone, which it compaſſeth with a broad tendon.

Depreſſors
1. It is pulled downe by *latiſſimus*, and *rotundus major*. *Latiſſimus*, ſo called from its largeneſſe; for with its mate it covereth the whole backe. It is called *ani ſcalptor* or *verſor*

terſor, for without theſe this office could not bee performed. This ſprings by a broad membranous beginning frõ the hinder proceſſes of the *vertebræ* of the breaſt, beginning at the ſixt, & reaching to the middle of the *os ſacrum*, and upper part of the *os ilium*: then paſſing upwards, when it is come to that part of the backe where the ribbes bend it, becommeth fleſhie, and paſſeth by the lower corner of the *ſcapula*: where becomming narrow it is inſerted under the upper end of the ſhoulder bone

by a ſhort broad tendon between the *muſculus pectoralis* and the *rotundus detrahens*. *Rotundus major*, or more properly *teres major*, becauſe it is long without edges: this ſpringeth from the whole *coſta* of the *ſcapula*, and is inſerted into the ſhoulder bone a little below the necke of it.

Movers forward. 1.

It is drawn forward by *pectoralis* and *coracoideus*. *Pectoralis*, it beginneth from the ſeventh, ſixth, and fifth true ribs, the *ſternum*, and above the halfe of the cannell bone, and by a ſharpe tendon

is inſerted into the ſhoulder bone, betweene the *deltoides* and the *biceps*.

Coracoides, it beginneth at the *coracoides apophyſis*, and endeth about the middle of the ſhoulder bone. 2.

It is moved backward by three: *infraſpinatus*, or *ſubſcapularis*, or *immerſus*, and *rotundus minor*: *infraſpinatus* or *ſubſcapularis*, it poſſeſſeth the whole cavitie of the *ſcapula*. It ſpringeth from the *baſis* of it fleſhie, and ſo continuing, paſſeth forward; but becomming ſtill narrower to the neck Pullers backward.

of the *ſcapula*, at the laſt it getteth a broad tendon by the which it is inſerted into one of the ligaments of the arme.

2. *Rotundus minor*, or *ſuperſcapularis inferior*: this ariſing from the *baſis* of the *ſcapula* by a fleſhie beginning, marcheth forward, and becomming narrower is inſerted into the fourth ligament of the arme, by a broad and ſhort tendon.

Nota. One thing is to bee noted, that the tendon of *muſculus latiſſimus*, together with the tendon of *muſculus temporalis*, cauſe

cauſe that cavitie which is ſeene in the cavitie of the arme-pit: for the tendon of the *latiſſimus* frameth the inſide, but that of the *temporalis* the outſide of the cavitie.

Cap. 22.
Of the muſcules of the ulna.

THe elbow hath two bones, *ulna* and *radius*. The *ulna* ſerveth for flexion and extenſion; but the *radius* for pronation and ſupination. The *ulna* is bended by two, to

Benders of *ulna*.

1.

wit, *biceps*, and *brachiæus internus*. *Biceps* hath two beginnings from the ſhoulder blade. The firſt is that which is outward, tendinous and round; it ſpringeth from the upper brimme of the hollowneſſe of the *ſcapula*, and marcheth under the ligaments of the joint, above the top of the ſhoulder by the chink in the bone made for that purpoſe, where it is wrapped by a ligament which riſeth from the hollowneſſe. The ſecond head is broader than the firſt, framed partly of a tendon, and partly

partly of fleſh : it ſprings from the anchor-like proceſſe of the ſhoulder-blade ; then deſcending by the inner part of the top of the *ſcapula*, it meeteth with the former; below the head of the ſhoulder bone it becommeth a ſtrong fleſhy muſcule: afterward ending in a thicke, round, & ſtrong tendon, it is inſerted into the long knob under the upper end of the *radius*. This is that tendon wh'ch cauſeth great pain if it be pricked in phlebotomie. *Brachiæus internus* lying under the *biceps*, riſing

from the middle of the ſhoulder bone, unto which it cleaveth firmly: it is inſerted both into the *ulna* & *radius* where they meet.

Extenders. The *ulna* is extended by foure muſcules, *longus*, *brevis*, *brachiæus externus*, and *cubitalis*.

1. *Longus* ariſeth from the lower brimme of the *ſcapula* neere to the necke, where it hath a peculiar hollowneſſe; and endeth in the knob of the elbow.

2. *Brevis* riſing from the hinder part of the necke of the ſhoulder bone, endeth in like manner in the

the *olecranum*; both these make but one strong tendon. *Brachiæus externus* placed under these two: it is placed upon the outside of the shoulder bone: it is confounded with the other two, and endeth where they doe. But this seemeth to *Spigelius* (*de human. corp. fabrica lib.* 4. *c.* 15.) to bee but a fleshie portion arising about the middle of the shoulder, and no peculiar muscule. *Cubitalis* or *anconeus*: it is placed in the hinder part of the bending of the elbow, which is called ἀγκὼν, and answe-

3.

4.

reth to the *muſculus poplitæus*: this ariſeth from the lower & hinder part of the ſhoulder bone, and placed betweene the *ulna* and the *radius*, it endeth by a nervous tendon in the laterall part of the elbow an inch below the *olecranum*. The extending muſcules have ſtraight fibres.

Cap. 23.
Of the muſcules of the radius.

THe *radius* hath two ſorts of muſcules: for

for ſome are called *pronatores*, or pullers downe: ſome *ſupinatores*, or raiſers up. The *pronatores* are two in number: the firſt is, *pronator ſuperior rotundus*: this ſpringeth from the root of the inner knob of the ſhoulder bone, and from the inner ſide of the *ulna*, where it is joyned to the armebone, & endeth obliquely about the middle of the *radius* by a membranous tendon. The ſecond is *pronator inferior quadratus*: this is altogether fleſhie. This ſpringeth from the lower and inner part

The pronators.

1.

2.

part of the *ulna* two inches broad; then marching obliquely above the ligament which joineth the *radius* to the *ulna*, it endeth in the inſide of the *radius*. The ending is as broad as the beginning; wherfore it is called *quadratus*, or foure ſquare.

The *ſupinatores* are in like manner two. The

Supinators 1.

firſt is *ſupinator longus*; ſo called, becauſe of all the muſcules which march by the *ulna*, it hath the longeſt belly. This ſpringeth fleſhie from the edge of the inner knob of the *ulna*, and march-

marching obliquely under the *radius*, is implanted by a membranous tendon into the upper part of the lower *appendix* of the *radius*, bending somewhat to the inner side. The second is *supinator brevis*: this springeth from the outward part of the ligament of the lower end of the arm-bone, and from the hinder processe of the *ulna*, being without membranous, and within fleshie, it is inserted into the middle of the *radius*. 2.

CAP.

CAP. 24.
Of the muſcules of the wreſt.

Benders.

THe wreſt is bended by two muſcules in the inſide. The firſt is *cubitæus internus*: this doth ariſe by a fleſhie and a nervous beginning from the ſharpe inner knob of the ſhoulder-bone; then paſſing fleſhie by the length of the *ulna*, it doth end by a tendon, partly nervous & partly fleſhy, in the fourth bone of the firſt ranke in the wreſt.

1.

2. The ſecond is *brachiæus inter-*

internus: this ariſing from the ſame place, and paſſing alongſt the *radius*, is inſerted in that bone of the backe of the hand which doth hold up the fore-finger.

Extenders

Two externall muſcules ſtretch out the *carpus*. The firſt is *radiæus externus, ſive bicornis*: this ariſeth from the ſharpe edge of the outer knob of the ſhoulder-bone in the upper part of it, by a broad beginning: then becomming fleſhie, it paſſeth to the middle of the *radius*, where it becommeth a ſtrong tendon,

I.

don, which preſently is divided into two tendons more broad than thicke. Both theſe paſſe a little aſunder by the *radius* under the ligament, whereof one is inſerted into the bone which ſtayeth the firſt finger, and the other into the bone which ſtaieth the middle finger.

2. The ſecond is *cubitæus externus*: this hath its beginning from the root of the externall knob of the ſhoulder bone, in the upper end of it: when it is come to the wreſt it becommeth a ſtrong round tendon, and is inſerted

serted into the upper part of that bone which stayeth the little finger, not farre from the wrest.

Cap. 25.
Of the muscules of the palme of the hand.

THis is thought to have two muscules. The first is *palmaris*: this riseth from the inner knob of the shoulder bone round and nervous; and placed under all the muscules, it mounteth over the *ligamentum annulare*. Then it is dilated into

into a broad membrane, which cleaveth firmely to the skin of the palm of the hand, for firme apprehenſion, and quickneſſe in feeling, and endeth about the firſt joints of the fingers. The ſecond is *caro quædam quadrata*, or a foure ſquare fleſhie ſubſtance: this ſpringeth from the *membrana carnoſa* under *mons lunæ*, where the eighth bone of the wreſt is placed. From thence it is carryed under the *muſculus palmaris*, to the middle of the palme of the hand, and is inſerted into

to the outside of that tendon which carrieth the little finger from the rest. This representeth two or three muscules, and serveth for the hollowing of the palme of the hand, to forme *Diogenes* his cup by, bringing the fleshie eminence under the little finger to the tenar.

Cap. 26.
Of the muscules of the foure fingers.

THe fingers are bended, extended, and moved

moved laterally. Now the muſcules which performe theſe motions, either belong to the other fingers, or to the thumb.

Benders of the foure fingers.

The fingers are bended by two muſcules. The

1. firſt is *ſublimis*: this ſpringeth from the inſide of the inner knob of the ſhoulder bone, and about the wreſt it produceth foure tendons, which end about the ſecond joints of the fingers. Theſe are hollow to give way by a chinke to the tendons of

2. the *profundus*. The ſecond is *profundus*: this ariſeth from the upper parts of the

the *ulna* and *radius* under the joint, and being ſeparate into foure tendons, they are implanted into the third joints of the fingers, under the *ligamentum annulare*, by the tendons of the *muſculus ſublimis*, under which they lye. The toes are extended by three muſcules: whereof one is common, and two proper. The common is *extenſor magnus*: this ariſing from the outer knob of the arme bone, about the wreſt is divided into foure tendons, which end in the lowermoſt joints of

Extenders.

of the fingers. The proper are two: the firſt is *indicator*, becauſe it belongeth to the fore finger. It ariſeth from the outward and middle part of the *ulna*, and by a double tendon it endeth in the ſecond joint of the fore finger: but one of the tendons becommeth one with the tendon of the *extenſor magnus*. The ſecond is *auricularis*, becauſe it belongeth to the little finger. It ariſeth from the upper part of the *radius*, and marching between the *ulna* and the *radius*, it is inſerted outwardly

wardly by a double tendon into the little finger.

The fingers are laterally moved two manner of waies: for either they are brought to the thumb, or they are carried from it. These motions are performed by two sorts of muscules, called *interossei* and *lumbricales*. The *interossei*, so called because they are placed between the bones of the *metacarpium*: they are fleshie and round, and spring from the bones into the which they are tyed: they passe straight alongst these bones: these when

Movers laterally.

Interossei.

when they are come to the roots of the fingers, they paſſe into tendons which cleave to the ſides of the fingers, and end in the ſecond joint by their tendon. Sixe are placed betweene the three diſtances, betweene the bones of the *metacarpium*, ſo that there are two betweene each diſtance: whereof one doth paſſe to the lower, one to the upper part of the tendon. The middle and ring finger receive two tendons, but the fore and little finger but one. The *lumbricales* are in number four: theſe

theſe ariſe in the diſtances of the tendons by the wreſt, and meet with the *interoſſei* about the firſt joint of every finger. The firſt is inſerted into the ring finger, the ſecond and third to the middle finger, but the fourth to the fore finger: theſe are not one with the tendons of the *interoſſei*.

Beſides theſe muſcules, the fore finger and the little finger have one *muſculus abducens*. That of the fore finger ſpringeth from the middle of the *ulna*: then neere the wreſt it is parted into

Abducing muſcules, two.

two tendons, which paſſe under the ligament. The upper is implanted at the root of the fore finger; but the lower into the root of the middle finger. That of the little finger, called *hypothenar*, is placed in the palme of the hand, under the little finger. It is ſhort and ſtrong: it ſpringeth fleſhie from the fourth bone of the *metacarpium*, and is implanted by a ſmall nervous tendon into the outſide of the firſt bone of the little finger.

CAP. 27.

Cap. 27.
Of the muſcules of the thumb.

THe thumbe is extended by two muſcules. The firſt is that which is called *longior*: this ariſeth fleſhie from the outer and higher ſeat of the *ulna*, where the rough line is; and the membranous, which tieth together the *ulna* and *radius*: from thence it is carried obliquely to the *radius*, & before it come to the *appendix* of it, it becommeth a round tendon,

Extenders.

1.

don, which paſſing under the annular ligament, marcheth according to the length of that ſide which is next to the fore finger, and is inſerted into the third bone of it.

2. The ſecond is *brevior*: this extendeth the ſecond and third joint of the thumbe. It ariſeth from the ſame line fleſhie: it paſſeth obliquely above the *radius*. By one tendon it is implanted to the root of the firſt joint of the thumb; by the other becomming membranous it cleaveth faſt to the ſecond and third bone

bone of the thumbe.

It is bended by one muſcule, which ſpringing from the inner part of the *ulna*, is implanted into the firſt and ſecond joint of the thumbe. This being fleſhie, which *Spigelius de hum.corp.fabric.l.4.c.19.* divideth into 5. muſcules, together with the *abducent* of the thumb, makes up *monticulus lunæ.*

Benders. 1.

Monticulus lunæ.

It is laterally moved by two muſcules. The firſt is called *thenar*, or *abducens*: this ſpringeth from the inner part of the bone of the wreſt which ſtayeth the thumb, by a

Movers laterally.

nervous beginning: then becomming fleſhie, it is inſerted into the firſt joint of the thumbe by a membranous tendon: this draweth it from the fore finger. The ſecond is

2. *antithenar*, or *adducens*: this is ſeated outwardly, in the diſtance betweene the thumbe and fore finger. This doth ariſe from the outer and hinder ſide of that bone which ſtayeth the firſt finger, & being fleſhie is inſerted into the whole inner ſide of the firſt joint of the thumb: this draweth the thumb to the fore finger.

CAP. 28.

Cap. 28.
Of the muſcules of the thigh.

Benders forward.

THe thigh is bended forwards by three muſcules. The firſt is *pſoas* or ψόα, and *lumbaris*: this lieth in the inner part of the *abdomen*, upon the *vertebræ* of the loines. It ariſeth from the tranſverſe proceſſes of the two lowermoſt ſpondils of the backe, and marching by the inſide of *os ilium*, it is inſerted into the leſſer *rotator*. The 2d is *iliacus internus*: this ſpringing frō the inſide of *os*

1.

2.

ilium, and being joined to the *pſoas* by his tendon, it endeth before betweene the greater and leſſer *rotator*. The third is *pectineus*: this ariſing from the upper part of the *os pubis*, is implanted a little below the neck of the thigh bone.

Benders backward.

It is bended backward by the three *glutii*, which make up the buttockes.

1. The firſt is the outermoſt and the greateſt: it ſpringeth from the *coccyx*, from the edge of *os ſacrum*, and from the half of the bending of *os ilii*, and is inſerted foure inches

ches below the great *rotator*. The ſecond is the middlemoſt: this ſpringeth from the outer part of *oſs ilium*, and is inſerted into the outer ſide of the greater *rotator*. The third is the lowermoſt: this ſpringeth a little lower, from the outer part of *oſs ilii*, and is implanted into the upper part of the greater *rotator*. It is drawne to the inſide by the *muſculus triceps*: this is the biggeſt of all the muſcules of the body, & hath three beginnings, which end in one muſculous tendon. The firſt

2.

3.

Drawers to the inſide.

1.

head doth proceed from the upper part of the ſhare bone, and lying by the *pectineus* is inſerted into the middle of the thigh bone. The ſecond ſpringing from the middle of the ſame bone, being leſſer is inſerted a little below the necke of the thigh bone. The third ariſing from the lower part of the ſame bone, being of all the lowermoſt and biggeſt, reacheth to the end of the thigh bone by a very ſtrong tendon. Theſe are inſerted into the hinder line which is in the bone,

Spi-

Spigelius de hum. corp. fabric. l. 4. c. 22. addeth another, which hee tearmeth *levidus*: this proceedeth from the fore part of *os pubis*, where the cartilage is which joyneth the two bones by a broad and fleshie substance. As it descendeth obliquely it becommeth a large tendon, but short: and marching downe by the inner part of the thigh, it is inserted into the middle of the thigh bone. 2.

It is turned towards the outside by foure small muscules called *quadrigemini*. Turners toward the outside.

gemini. They are placed above the articulation of the thigh one by another.

1. The firſt is called by others *Iliacus externus*, & from the figure *pyriformis*; it is longer than the reſt: it ariſeth from the lower and outer part of

2. the *os ſacrum*. The ſecond ariſeth from the knob of

3. *os iſchii*. The third ariſeth from the ſame part. Theſe are inſerted into the hollowneſſe of the greater *rotator*. The

4. fourth is called *quadrigeminus quadratus*, more fleſhie and broader than the reſt: it lieth two inches

thes distant from the
hird: it ariſeth from the
nner part of the knob of
he *iſchium*, and is im-
lanted into the outward
art of the great *rotator*.
t is rowled obliquely
y two muſcules called
turatores. The firſt is
turator internus, this
owleth it outward: this
riſeth from the inner
ircumference of the *os*
ubis, and is inſerted into
he cavitie of the great
tator. The ſecond is
turator externus: this
riſeth from the externall
ircumference of the hole
of the *os pubis*, and retur-
ning

Rowlers obliquely.

1.

2.

ning by the necke of the thigh bone as by a pully, it endeth in the cavitie of the great *rotator*, under the fourth *quadrigeminus*.

Cap. 29.

Of the Muſcules of the legge.

Benders.

I.

THe ſhanke hath thirteene muſcules, whereof foure doe bend it. The firſt is *ſeminervoſus*: this beginneth at the knob of the *iſchium*, and endeth in the inner ſide of the *tibia*, towards the backe

backe side. The second is *semimembranosus*: it proceedeth from the same knob, partly nervous, & partly membranous; but it marcheth by a broad tendon to the inner and hinder part of the *tibia*. The third is *biceps*: this ariseth from the same knob of the *ischium*, and being carried by the outside of the *tibia* in man, about the middle of the thigh it becommeth fleshie, and by one tendon it is inserted into the outside of the *fibia*. That this tendon may bee the more safely carried, 2. 3.

carried, the thigh bone is griped and covered with a ſmooth and ſlippery ligament. The fourth is *poſticus gracilis*: this ariſeth from the line where the ſhare bone and hip bone are joyned together, and marching downe in the inner ſide of the thigh, it is inſerted into the inſide of the *tibia*. In fat perſons this ſeemeth to be a ſtiffe ſinew, when they ſtride much. The ſhanke is extended by five muſcules.

Extenders.

1. The firſt is *membranoſus*: this proceeding from the upper part of the edge of the

he *ischium*, doth com-
aſſe both the thigh and
he legge: wherefore it
s called *faſcia lata*, be-
auſe it covereth all the
uſcules of the thigh and
gge, reaching to the
oot. If it be nipt by
arpe humours, great
ine is cauſed. The ſe-
nd is *longus*: this ari-
th from the upper and
repart of the edge of
e bending of the *os ili-*
, and paſſing by the in-
de of the thigh oblique-
, it endeth in the inſide
the legge: and becauſe
is thought to bring in
e legge, that it may be
laid

2.

laid upon the other, ſome call it *ſutorius*, the ſhooe-makers muſcule: but it may be more truely called *ſartorius*, the tailers muſcule, for when they ſow upon their ſtalls they ſit croſſe legged.

3. The third is *rectus gracilis*: this ſpringing from the lower brim of the *os ilium*, and paſſing ſtraight alongſt the length of the thigh, endeth in the *patella* by a broad tendon.

4. The fourth is *vaſtus duplex*: theſe are placed at the ſides of the *gracilis*, whereof the one is called *externus*: this ſpringeth from

m the root of the ater *trochanter*, it end- a little below the *pa-* outwardly. The o- r is called *internus*: 5. is ariſeth from the root the leſſer *trochanter*, endeth in the inſide the legge, a little be- w the *rotula*. The fifth 6. *rureus*: this lieth un- r the two *vaſti*, it ingeth from the fore- t of the *os femoris*, be- eene the two *trochan-* *s*, it endeth in the *ro-* *a*. Theſe foure muſ- es, the *rectus*, *gracilis*, two *vaſti*, and the *cru-* *s*, meeting about the knee.

knee become one ſtron
tendon, which coveret
the *patella*. One thing
to be noted, that the mu
cules which extend th
legge are ſtronger tha
thoſe which draw it in
that the weight of th
bodie may bee the bette
upholden when we ſtand
To theſe wee may adde
7. that muſcule which is cal-
led *popliteus*, or *ſuppopli-*
teus, which moveth th
legge obliquely: this ly
eth in the hollow o
the hamme, above th
head of the *ſolæus*: i
ſpringeth from the ou
ter knob of the thigh
bone,

ne, and is inſerted in upper and hinder part the leg, which it clip-h firmely.

CAP. 30.
Of the Muſcules of the inſtep.

THe inſtep is bended when it is drawn up-rds. To performe this tion it hath two: the t is *tibiæus anterior*: ariſeth from the up- *epiphyſis* of the *tibia*, re to the *fibula*, and aving unto the ole *os tibiæ*, about the

Benders.

1.

the middle of it it be
commeth a tendon
which paſſing under th
annular ligament of th
inſtep, is divided in tw
tendons, whereof th
one is inſerted into th
firſt of thoſe bone
which are called *innom*
nata, without a prope
name: the other is inſe
ted into the bone ſet b
fore the thumbe. Th
2. ſecond is *peronæus an*
rior: this ariſeth fro
the outer & middle pa
of the ſmall focill, a
being carried throu
the chink of the outer
kle, it is inſerted into
bo

bone of the inſtep, which ſtayeth the little toe: it hath two heads and two tendons. The foot is extended when it is drawne backwards. To performe this motion it hath two muſcules. The firſt is *gemellus externus*, or *gaſtrocnemius externus*: this muſcule hath two heads, that have ſeed bones not farre from their beginnings. The firſt head is vnder the hamme, from the inner part of the end of the thigh bone, where it is fleſhie and broad. It marching down by the backe and inner part

Extenders. I.

part of the *tibia*, when it is come to the middle of it, it becommeth tendinous, and is joyned with the tendon of *gemellus internus*. The other head likewiſe ariſeth under the hamme, but from the outer part of the end of the thigh bone. It paſſing downe by the outward and backe part of the leg, becommeth tendinous a little above the tendon of the former: then being joined to the former, they become one ſtrong, broad, and ſinewie tendon, which is inſerted into the heele. The ſecond

is *gemellus internus*, or *gaſtrocnemius internus*: his lieth under the former, and is of a livid colour. It ſpringeth from the *appendix* of the leſſer ſcil by a ſtrong nervous ſubſtance. It doth become thicker, but when it hath paſſed the middle of the *tibia* it becometh narrower, and tendinous: and a little above the heele it is ſo united to the tendon of the former *gemellus*, that both ſeem to be but one, and is inſerted into the heele. By this tendon butchers hang up the

Movers obliquely. I.

beaſts killed. The inſtep is moved obliquely by two. The firſt is *tibiæus poſticus adducens pedem*, or *nauticus*, becauſe ſailers uſe it much when they goe up by the ropes. It ſpringeth both from the greater and leſſer focill, and from the ligament which tyeth theſe together: it being tied to this tendon, lyeth amongſt the hinder muſcules, and neere to the inner ankle it becommeth tendinous: then paſſing by it, it goeth to the ſoal of the foot, and is inſerted into the lower part of the

the bone which is next to the *cubiforme*. The ſecond is *peronæus vel fibulæus poſticus*: this ariſeth from the upper but hinder part of the ſmall focill, by a nervous and ſtrong beginning, and cleaving to the outſide of the perone, it paſſeth downe round and fleſhie; the outer part is of a livid colour, but the inner of a red. When it is come to the middle of the foot it becommeth tendinous, which behinde under the outward ankle obliquely marching, is inſerted under the ſoale of 2.

Plantaris muſculus.

the foot into the bone ſet before the great toe. To theſe may be added that muſcule which is called *plantaris*, becauſe it covereth the whole ſole of the foot. It lyeth under the *gemellus externus*, and ſpringing from the outer part of the end of the thigh bone, under the ham, by a round fleſhie beginning; then paſſing within the leg, betweene the two *gemelli*, and from thence to the ſole of the foot, it covereth all the toes about the firſt joint, and is inſerted into all the toes. It anſwers *palmaris*.

CAP.

Cap. 31.
Of the Muſcules of the toes.

THe toes are extended by two: the firſt is *longus*: it doth ariſe by a nervous and ſharpe beginning from the fore *appendix* of the great ſocil, and cleaving to the ligament which uniteth the two ſocils, it goeth down to the foot. Firſt, it paſſeth under the tranſvers ligament; then it being divided into foure tendons, they are inſerted into the third and

Extenders. 1.

ſecond joint of the foure toes to extend them. The ſecond is *brevis*: this lyeth under the former: this hath its beginning from the tranſvers ligament, fleſhie and broad, and by its foure tendons it is inſerted into the firſt joints of the four toes. The benders of the toes are in like manner two. The firſt is *longus*, or *perforans*: it lieth under the *gemellus internus*, and ariſeth from the hinder part of the *tibia*, under the hamme by a long and a fleſhie beginning, and paſſing according

2.

Benders.

1.

ding to the length of the *tibia* unto the which it cleaveth : when it hath the middle of it , it becommeth tendinous : then under the inner ankle , and the ligament which reacheth from the lower *appendix* of the *tibia*, it goeth by a hollowneſſe of the heele to the ſoal of the foot: where being divided into foure tendons , it paſſeth through the holes of the *flexor brevis*, and is inſerted into the third and laſt joint of the foure fingers. The ſecond is *brevis*, or *perforatus*: this ſpringeth from 2:

from the inner part of the heele bone, and when it hath paſſed the middle of the foot, it is parted into foure round tendons, which are inſerted into the ſecond joints of the foure toes, being perforate to give way to the tendons of the former muſcule to paſſe to the third joint. Thirdly, *lumbricales*, foure: theſe ſpring from the tendons of the *perforans* ſmall and round, and are inſerted by a ſmall tendon into the ſide of the firſt joint, which they help to bend. The fleſhie ſubſtance which

Lumbricales, 4.

which filleth up the cavitie of the firſt joints of the four fingers, ſeemeth much to further the action of theſe muſcules: for ſpringing by two ſharpe beginnings from the lower part of the heele bone, it is inſerted into the beginnings of the foure *lumbricales*.

The *interoſſei* are placed between the bones of the inſtep. Theſe *interoſſei*, ſo called becauſe they are placed between the bones, in the foot are ten in number, whereas there are but eight in the hand, becauſe the inſtep

The interoſſei.

hath one bone more than the wreſt. Each of them doth ſpring from the ſide of the bone of the inſtep where it is placed, and all marching according to the length of the bone fleſhie, they are inſerted into the roots of the fingers by ſhort tendons, and ſomewhat broad. If the inner be drawn together, the finger is brought in, but if the outer be moved, the finger is carried from the reſt. Betweene the foure diſtances betweenthe bones there are eight ſuch muſcules, at the outſide of the thumb one,

one, and one other at the outside of the little finger. Besides these you may observe a small transvers muscule, which passeth from the thumbe over the first joints of the fingers to the little finger. It seemeth to have a twofold use: first, to tye together the bones of the first joints of the toes. Secondly, to save their tendons from harm when wee tread upon hard things.

The transvers muscule. The invention of this is ascribed to *Casserius* by *Bartolinus l.4.c.* 14.

The great toe hath peculiar muscules. The first is *extensor*: this springeth by a fleshie beginning from

Extenders of the great toe. 1.

from the outſide of the great focill, where it parteth from the *fibula*. It cleaveth faſt to the ligament, which ties the *tibia* to the *fibula*, & marching alongſt the upper part of the foot, it is inſerted into the whole upper part of
2. the thumbe. The ſecond is *flexor*: this ſpringeth from the back part of the *fibula*, about the middle of it fleſhie and pointed: then becomming thicker, about the inner ankle it becommeth tendinous, and is inſerted into the laſt joint of the thumbe. Before it come to the ſecond

ond joint it hath a lar-
er ſeed-like bone than
he joints of the reſt of
he fingers have. The
hird is *adducens polli-* 3.
em, which draweth the
reat toe from the reſt,
o the inner part of the
oot. It ſpringeth ner-
ous from the ligament
which tieth together the
eele bone, and the *talus*,
t cleaveth to the bone
et before the thumb, and
s inſerted by a round
endon into the outſide
of the firſt joint of the
great toe. The laſt is *ab-* 4.
ductor minimi digiti: this
being placed in the out-
ſide

ſide of the foot it proceedeth from the outer part of the heele bone, where the knob is nervous: but becomming fleſhie, and being tyed to the bone of the *metatarſus*, which ſtayeth the little toe, it is inſerted by a round tendon into the outſide of the firſt joint of the little toe.

FINIS.

The number of the muſcules of each part.

THe eye-lid hath 4
The occipitals on each ſide 1
Each eye hath 6
The noſe hath 6
Theſe are in number 17.
Both the lips have 10
The lower jaw hath 10
The eare hath 10
The tongue hath 8
The bone of the tongue hath 8
The *larynx* hath 10

The

The *uvula* hath	2
The *pharynx* hath	7
Theſe are in number 65.	
The head hath	14
The necke hath	8
The breaſt hath	30
The loines have	6
The *abdomen* hath	10
The prick hath	4
The *clitoris* hath	4
The ſtones have	1
The bladder hath	1
The *anus* hath	3
Theſe are in number 81.	
The ſhoulder blade hath	5
The ſhoulder hath	8
The *ulna* hath	6

The *radius* hath	4
The wreſt hath	4
The palme of the hand hath	2
The four fingers have	19
The thumbe hath	5
Theſe are in number 53.	
The thigh hath	11
The ſhanke hath	13
The inſtep hath	7
The toes have	23
Theſe are in number 54.	
The totall ſumme of all the muſcules of the bodie of man	270

AN

AN ENUMERATION OF ALL THE MUSCULES OF THE WHOLE BODIE.

EAch *eye* hath one frontall to lift it up: he first is called *orbicularis major*, under the frontall; and two called *ciliares*, one in each eye-lid to hut it.

The occipitals which meet these are two, one n each side.

The muscules of the eie-lids foure in each.

As

The muſcules of the eares. 10.

As for the *eare*, in the outſide there are foure paire: firſt, *par attollens*, lifting it up: ſecondly, *par deprimens*, pulling it downe: thirdly, *par adducens*, which moveth it forward: fourthly, *par abducens*, which pulleth it backeward. In the inſide there are two, *externus*, the externall; and *internus*, the internall.

The muſcules of the eye, 6.

The *eye* hath ſixe muſcules, foure ſtraight, and two oblique.

The firſt of the ſtraight is called *attollens*, or *ſuperbus*.

The

The ſecond is *depri-*
mens, or *humilis*.

3. *Adducens*, or *bibito-*
rius.

4. *Abducens*, or *indig-*
natorius.

The oblique are two:

1. *Obliquus major*, *ſeu*
ſuperior.

2. *Obliquus minor*, *ſeu*
inferior.

The *noſe* hath ſixe muſ-
cules:

Erectores, or pullers
upward, two.

Dilatatores, or openers,
two.

Conſtrictores, or pullers
together two, one in each
ſide.

The muſcules of the noſe, 6.

The

The muſcules of the lips, 10.

The *lips* have two common muſcules, and foure proper:

Of the common, the firſt is called *zygomaticus*, the ſecond *bucco*.

Each *lip* hath foure proper:

1. *Attollens*, which beareth up the upper lip.

2. *Deprimens*, which beareth the lower lip downwards.

3. *Orbicularis*, or *ſphincter*, which maketh up the fungous ſubſtance of the lips.

4. *Abducens*, or drawing aſide.

The *lower jaw* is moved up-

pwards by three muſ-
ules: the *temporalis*, the
erigoideus internus, and
he *maſſeter*.

The muſcules of lowerjaw. 10.

It is pulled downe by
igaſtricus, and *muſculus*
atus.

It is pulled forward by
erigoideus externus.

The *tongue* hath eight
nuſcules, foure on each
ide.

The muſcules of the tongue 8.

1. *Genioglosſus*, which
raweth it forewards.

2. *Miloglosſus*, it help-
th the thruſting of it
out.

3. *Baſigloſſus*, or *hypſi-*
loſſeus, by the which it is
pulled backwards.

4. *Sty-*

4. *Styloglossus*, or *ceratoglossus*, by the which it is moved to the sides.

The muscules of the bone of the tongue. 4.

The *os hyoides* hath four muscules on each side.

1. *Sternohyoides.*
2. *Genihyoidæus.*
3. *Coracoidæus.*
4. *Styloceratoidæus.*

The muscules of the larynx. 9.

The *larynx* hath foure common muscules, and five proper.

Of the common there are,

1. Two *hyothyroidæi*, which pull up the *larynx.*
2. Two *Bronchii*, which pull it downe.

Of the proper,

1. *Cricothyroidæus anticus.* 2. *Cri-*

2. *Cricothyroides lateralis.*

3. *Cricoarytenoides poſticus.*

4. *Thyroarytenoides, ſiveglottæus.*

5. *Arytenoidæs.*

The *pharynx*, or beginning of the *œſophagus* hath ſeven muſcules, three paires, and one without a match.

The muſcules of the pharynx. 7.

Of the paires,

1. *Sphenopharingæus.*

2. *Cephalopharingæus.*

3. *Staphylopharingæus.*

That which hath no match is called *œſophagæus.*

The *gargareon* hath

The muſcules of the *uvula*. 2.

two Muſcules.

1. *Pteryſtaphilinus externus*, this holdeth it up.

2. *Pteryſtaphilinus internus*, this doth the ſame.

The muſcules of the head. 4.

The *head* hath two ſorts of muſcules: for ſome are common, and ſome are proper: the common, which together with the necke move the head; and theſe are the muſcules of the neck.

Proper muſcules. 14.

The proper are thoſe which onely move the head, when the necke remaineth immoveable: and theſe are in number foureteen. It is pulle

forward by the two *maſtoidæi*: theſe are placed before: theſe bend it foreward. Behind twelve are placed.

1. *Splenius, vel triangularis.*

2. *Complexus, vel trigeminus.*

3. *Recti majores*, two.

4. *Recti minores*, two: theſe ſtretch out the head

5. *Obliqui majores, ſive ſuperiores*, two.

6. *Obliqui minores, ſive inferiores*, two: theſe winde the head about.

The muſcules of the necke, 8.

The *neck* hath foure on each ſide.

It is bended by 2. paires,

1. *Par longum.*
2. *Par ſpinatum, triangulare, ſcalenum.*

It is extended by two paires,

1. *Semiſpinatum.*
2. *Tranſverſarium.*

Seeing 64. muſcules ſerve for one ſide of the head and neck, there muſt bee 128. for both the ſides.

The trunke of the bodie hath 46. muſcules for one ſide.

The muſcules of the breaſt.

As for the breaſt, firſt, theſe dilate it:

1. *Subclavius.*
2. *Serratus major.*
3. *Serratus poſticus ſuperior.*

perior.

4. *Serratus poſticus inferior.*

5. *Intercoſtales externi*, fifteen in number, which are as one muſcule.

The breaſt is contracted by fifteene in number.

1. *Sacrolumbus.*

2. *Semiſpinatus*, or *triangularis.*

3. The internall intercoſtals, in number thirteene.

Diaphragma.

Double this number, & you ſhall have 32.

The loines are bended by the *triangulares*, one

on each side.

The muſcules of the loines.

They are extended by foure, two on each side.

1. *Semiſpinatus.*

2. *Sacer*: two of them on each side.

The muſcules of the belly, 10.

The *abdomen* hath five on each side.

1. *Obliquus aſcendens.*

2. *Obliquus deſcendens.*

3. *Rectus.*

4. *Tranſverſalis.*

5. *Pyramidalis.*

The muſcules of the ſtones, 2.

The *ſtones* have two cremaſters to elevate them.

Thc muſcules of the pricke, 4.

The *prick* hath two on each side.

1. *Erector*, or *collateralis.*

2. *Ac-*

2. *Accelerator*, or *interior*.

The *bladder* hath one, the *ſphincter*.

The *anus* hath three muſcules: one to purſe it in, called *ſphincter*, and two to pull it up, called *levatores*.

Double this number, and you ſhall have 92.

The arme hath 44. muſcules.

The ſhoulder blade hath 5. muſcules on each ſide.

1. *Trapeſius*, for ſundry motions.

2. The proper *levator*, or lifter up.

The muſcule of the bladder, 1.

The muſcules of the *anus*, 3.

The muſcules of the arme.

The muſcules of the ſhoulder-blade, five on each ſide.

3. *Rhomboides*, which draweth it backwards.

4. *Serratus minor anticus*, drawing it forewards.

5. *Serratus major.*

The muſcules of the ſhoulder. 8.

The *brachium* or ſhoulder hath eight.

1. *Deltoides.*
2. *Supraſpinatus.* } moving it upward.

3. *Latiſſimus.*
4. *Rotundus major.* } drawing it downewards.

5. *Pectoralis.*
6. *Coracoides.* } pulling it forward.

7. *Ro-*

7. *Rotundus minor.*
8. *Immerſus*, or *infra-ſpinatus.*
} pulling it backwards.

The *elbow* hath ten muſculs.

The *ulna* hath ſixe. — The muſcules of the ulna. 6.

1. *Biceps.*
2. *Brachiæus internus.*
} bend it.

3. *Longus.*
4. *Brevis.*
5. *Brachiæus externus.*
6. *Angonæus.*
} extend it.

The *radius* hath foure. — The muſcules of the radius. 4

1. *Pronator rotundus ſuperior.*

2. *Pronator inferior quadratus.*
3. *Supinator longus.*
4. *Supinator brevis.*

The muſcules of the wreſt, 4.

The *carpus*, or wreſt hath foure muſcules.

1. *Cubitæus internus.*
2. *Brachiæus internus.*

} theſe bend it.

3. *Radiæus externus, ſive bicornis.*
4. *Cubitæus externus.*

} theſe extend it.

The muſcules of the fingers 18. in each hand.

The fingers have eighteene muſcules.

1. *Sublimis.*
2. *Profundus.*

} by theſe they are bended.

3. *Com-*

3. *Communis extenſor magnus.*
4. Proper to the fore-finger or *indicator.*
5. Proper to the little finger, or *auricularis.*

} theſe extend the fingers.

6. *Interoſſei.*
7. *Lumbricales*, 4.

} theſe partly part them, partly draw them together.

8. *Abductor digiti parvi.*
9. *Adductor indicis, ſive*

ſive indicator.

The muſcules of the thumb 6.

The thumbe hath ſixe muſcules.

1. *Longus.* 2. *Brevis.* { theſe extend it.

3. One it hath to bend it.

4. *Thenar* bendeth it forwards.

5. *Antithenar* bendeth it backwards.

Double the number of 42. the number of the muſcules of one arm, and you ſhall finde 84. muſcules of them both.

The muſcules of the thigh. 10.

The *thigh* hath ten muſcules.

1. *Pſoas.* 2. *Iliacus.* 3. *Pectinæus.* { theſe bend it forward.

4. *Glu-*

4. *Glutius maximus.*
5. *Glutius medius.*
6. *Glutius minimus.*

theſe bend it backwards.

7. *Quadriceps*, or *quadrigemini*, 4. ſmall muſcules.

theſe bend the thigh outward

8. *Triceps*, this bendeth it inwards.

9. *Obturator internus*, this rowleth it outwards.

10. *Obturator externus*, this rowleth it inwards.

Double the number 10. and you ſhall have 20. muſcules for both thighs.

The

The muſcules of the legge, Of the *tibia*, 11.

The *legge* hath 42. muſcules.

The *tibia* hath 11.

1. *Seminervoſus.*
2. *Semimembranoſus.*
3. *Gracilis internus, ſeu poſticus.*

theſe bend it.

4. *Biceps.*
5. *Membranoſus, ſeu faſcia lata.*
6. *Sutorius, ſive longus.*
7. *Vaſtus externus.*
8. *Vaſtus internus.*
9. *Rectus gracilis.*
10. *Crureus.*

theſe extend it.

11. *Sup-*

11. *Suppopliteus*, or *popliteus*, this moveth it obliquely.

The *inſteppe* hath eight muſcules.

The muſcules of the feet, 9.

1. *Tibiæus anterior.*
2. *Peronæus anterior.*

} theſe bend it.

3. *Gemelli duo*, or the twinnes.
4. *Plantaris.*
5. *Solæus.*

} theſe extend it.

6. *Tibiæus poſticus.*
7. *Peronæus poſticus.*
8. *Plantaris*

} theſe move it obliquely.

The *toes* have eighteen

The muſcules of the toes. 23.

teene muſcules.

1. *Longus.* 2. *Brevis.* } theſe bend them.

3. *Sublimis.* 4. *Profundus.* } theſe extend thē.

5. *Interoſſei* eight, theſe bring them together and ſever them.

6. *Lumbricales* foure.

7. *Caro muſculoſa*, or the muſculous fleſh.

8. *Tranſverſalis.*

9. The drawer in of the little toe.

} theſe draw them together.

The muſcules of the great toe. 4.

The great *toe* hath four muſcules.

1. *Extenſor*, or extender.

2. *Fle-*

2. *Flexor*, the bender.
3. *Adducens*, that which draweth it to the reſt.
4. *Abductor minimi digi-*, that which drawes the tle finger from the reſt.

Double the number of 2. expreſſing the num-er of the muſcules ſer-ing for one legge, and ou ſhall have the num-er of 84. which is the umber of the muſcules f both the legges.

FINIS.

THE EXPLICATION OF SOME APPELLATIONS OF THE MUSCULES and some other parts of the bodie.

ANcyroides, *anchor-like.*

Ancon, *the bending of the elbow*

Acromium, *the upper part of the shoulder-blade.*

Arytenoidæus, *because it beginneth and endeth in the ewar-like cartilage.*

Bronchus, *the lower part of the wind-pipe.*

Biceps, *because it hath two heads.*

Ceratogloſſus, *because it ariſeth from*

om the points of the bone of the ngue, and is inſerted into the tongue.

Coracohyoidæus, *becauſe it ſpring-h from the proceſſe of the ſhoulder-ade, like the crowes bill, and is inſerted to the bone of the tongue.*

Cephalopharingæus, *becauſe it be-inneth where the head is joyned to the cke by the firſt* vertebra, *and is inſer-d into the* pharynx.

Crycothyroidæus, *becauſe it ſpring-h from the ring-like cartilage, and is ſerted into the* thyroides.

Crycoarytenoidæus, *becauſe it be-nneth at the ring-like, and endeth at e ewar-like cartilage.*

Corone *is the proces of the lower jaw.*

Coracoides, *like the crowes bill.*

Cremaſter, *it holds up the ſtone.*

Deltoides, *becauſe it is like to the reeke letter* Δ.

Geneogloſſus, *becauſe it hath its ginning from the chinne, and is in-*

ſerted

ſerted into the bone of the tongue.

Gluteus, becauſe it maketh up th buttockes.

Gaſtrocnemius, becauſe it maketh u the calfe of the legge.

Hypſiloglosſus, becauſe it hath its be ginning from the bone of the tongue, and is inſerted into the tongue.

Hyothiroidæus, becauſe it ſpringeth from the bone of the tongue, and is inſerted into the bucklar-like cartilage.

Larynx is the beginning of the wind pipe, derived from λαρυγγίζειν, which is to ſhout with an open mouth. It is framed of foure cartilages: the firſt is Thyroides, bucklar-like: the ſecond and third is Arytenoides, ewar-like: the fourth is Cricoides, ring-like.

Myloglosſus, becauſe it hath its beginning at the root of the grinders of the lower jaw, & is inſerted into the tongue.

Maſtoidæus, becauſe it is inſerted into the dugge-like proceſſe of the tempill.

Maſſeter

Masseter, *because it serves for eating.*
Pharynx *is the throat.* Psoa, *because*
is clipped in embracing.
Rhomboides, *because it is like the*
athematicall figure called rhombus,
ving foure lines, but not the 4. *sides*
uall.
Sternohyoidæus, *because it hath its*
ginning from the sternum, *and is in-*
ted into the bone of the tongue.
Styloceratohyoidæus, *because it*
ingeth from the bodkin-like processe,
d is inserted into the points of the
ne of the tongue.
phænopharingæus, *because it spring-*
h from the wedge bone, and is inserted
o the pharynx.
Stylopharingæus, *because it begin-*
th at the bodkin-like processe, and is
serted into the pharynx.
Styloides. *because it representeth the*
of a table-booke, or a needle.
Sternohyoidæus, *because it begin-*
neth

neth at the ſternum, and is inſerted into the bone of the tongue.

Spinatus, which is placed by the ſharp brimme of a bone.

Sigmoides, which is like to the greek C.

Sphænoides, the wedge-like bone.

Sphincter, the drawer together.

Thyroaritenoidæus, becauſe it beginneth at the bucklar-like cartilage, and endeth in the ewar-like.

Trigeminus, which hath three beginnings.

Trapezius, becauſe it hath foure ſides bounded with unequall lines: for the Geometers ſo call ſuch a figure.

FINIS.

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